

BIOTERRORISM:
E. COLI

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

TACTICS AGAINST TERRORISM: **E. COLI**

South Carolina Department of Health and Environmental Control
Office of Public Health Preparedness



What is bioterrorism?

Bioterrorism is the intentional use of bacteria, viruses, or natural toxins (poisons) as a weapon to kill, injure or produce disease in humans, animals or plants. Terrorists may use such an attack to create fear, disrupt the economy, or to get a response from the government.

What is E. coli?

E. coli is a family of naturally occurring bacteria. Some of them can make you very sick and can be deadly. While consumption of undercooked ground beef has historically been associated with E. coli infections, recent outbreak investigations have identified additional sources of illness including leafy greens, sprouts, nuts, cheese and deli meats, among other items.

Healthy cows can carry E. coli bacteria. When the cattle are processed for food, they can pass the bacteria to people and other animals. Person-to-person contact in families and child care centers is another possible way to get sick from certain types of E. coli. Infection can also occur after drinking raw milk and after swimming in or drinking water tainted by raw sewage.

Types of E. coli

There are hundreds of types of E. coli. Most types of E. coli will not hurt people. They live in the intestines of healthy people and animals. Some types of E. coli, Shiga toxin-producing E. coli or "STEC," produce a toxin that can cause serious illness or death. E. coli O157:H7 is a well known type of STEC.

How people get STEC

It is believed that it only takes a small amount of STEC to make you sick. The disease-causing bacteria can be passed from person to person. You can get it by:

- Eating food contaminated with STEC that is eaten raw or undercooked. Most people get the illness this way. Contaminated food can look and smell fine.
- Drinking water, unpasteurized milk or juice that contains STEC bacteria.
- Eating foods that have been handled by an infected food worker.
- Swimming in water that has human or animal waste in it.
- Coming into contact with the feces of an infected person. An example of this would be changing the diaper of an affected child.
- Coming in contact with disease-carrying animals in petting zoos or farms. The bacteria can be killed by thoroughly washing hands with soap and water.

An estimated 265,000 cases of STEC infection occur in the U.S. each year.

How E. coli can be used for terrorism

Terrorists could use STEC bacteria as a weapon to strike many people at one time. Among the methods that could be used are:

- Adding bacteria to a water source or to food
- Infecting cattle that people will eat.

Symptoms of E. coli

Symptoms of the illness typically appear three to four days after eating contaminated foods but may be as short as 1 day and as long as 10 days. Symptoms include:

- Diarrhea (often bloody)
- Stomach cramps
- Vomiting
- Little or no fever

You can have STEC infection but not have symptoms. Still, you can pass the bacteria to others and make them sick. People with this illness usually get better in five to seven days. Around 5-10 percent of people with STEC infection develop a life-threatening complication called Hemolytic Uremic Syndrome (HUS) that can lead to kidney failure, strokes, seizures and brain damage. These people need hospitalization.

Treating E. coli

There is no medicine to prevent E. coli. People with mild STEC infections usually get better without medicine in five to seven days. A doctor might prescribe medicine to treat symptoms of E. coli. Do not try to treat yourself with medicine bought at the store.

STEC can cause your kidneys to stop working. This condition would cause you to die. If your doctor thinks you are having problems with your kidneys, he or she will send you to the hospital. Your blood will be replaced with healthy blood and your kidney will be treated. If your kidneys fail because of E. coli illness, you could have life-long problems like high blood pressure, seizures, paralysis and blindness.

How to protect yourself and others

- Cook ground beef and hamburgers until their juices are clear, not bloody. Ground beef can turn brown without killing the bacteria. To be sure the bacteria are dead, put a meat thermometer in the thickest part of the meat. Meat is safe to eat when it is cooked to a temperature of at least 155°F. Wash the meat thermometer after you use it.
- Store beef products on lower shelves of the refrigerator to prevent them from dripping on other foods.
- Wash your hands, counter tops, and spoons, forks and knives with hot, soapy water after they touch raw beef.
- Never put steaks, roasts, hamburgers or ground beef on the same plate that held raw meat until after the plate has been thoroughly washed.
- If you are served a hamburger that is still pink or bloody in the middle, ask that it be cooked longer. Ask for a new bun and a clean plate, too.
- Don't drink milk or juice that is not pasteurized. Pasteurized milk or juice has been heated to a high temperature to kill bacteria.
- Wash fruits and vegetables, especially if you are going to eat them raw.
- Children younger than 5 years old, people who get sick easily and elderly people should not eat alfalfa or bean sprouts.
- Only drink water that has been treated to make it safe to drink.
- Avoid swallowing water when you go swimming.
- Make sure people with diarrhea, especially children, wash their hands with soap after using the restroom.
- Anyone with diarrhea should avoid swimming in public pools or lakes. They should not share baths with another person or make food for other people.
- Wash your hands after changing a baby's dirty diaper.
- Wash your hands after touching animals in petting zoos or farms. Parents should closely supervise their children's hand washing to ensure bacteria are killed. Be sure to use antibacterial soap, if possible.

What's being done to protect you

- If a terrorist attack involving STEC bacteria occurs, the South Carolina Department of Health and Environmental Control (DHEC) and the Centers for Disease Control and Prevention (CDC) will take steps to help prevent other people from getting sick. You will be given important health information through your local news media.
- DHEC inspects restaurants to make sure food is prepared in a safe, clean way. DHEC will inform the public if people get sick from STEC caused by food from a restaurant or food that has been sold in stores.
- DHEC provides technical assistance to public drinking water systems concerning emergency response issues and bioterrorism.
- DHEC helps public water systems assess their risks and prepare for emergencies.
- The U.S. Department of Agriculture (USDA) makes sure cattle farms and meat-processing plants are safe and clean. The USDA also inspects food brought to the U.S. from other countries.
- DHEC shares information about STEC cases with the CDC and other states so that illnesses related to exposures or nationally distributed foods can be identified quickly.

If there is a terrorist attack using STEC, local and state law enforcement and health agencies will provide you with additional instructions to protect yourself.

Numbers to know

For all emergencies: 9-1-1

SC DHEC (*during business hours*): (803) 898-3432

CDC: (800) 232-4636

Palmetto Poison Center: (800) 222-1222

For more information

SC DHEC

www.scdhec.gov

www.scdhec.gov/tat (*Tactics Against Terrorism*)

www.scdhec.gov/administration/library/ML-018004.pdf

CDC

www.bt.cdc.gov

USDA

www.fsis.usda.gov

The phone numbers for reporting cases or possible cases of bioterrorism to your local health department and the DHEC Division of Acute Disease Epidemiology are available at: www.scdhec.gov/administration/library/CR-009025.pdf

This publication provides health information for your general knowledge. Talk to your doctor about your concerns about any medical condition. DHEC does not recommend you diagnose or treat yourself for a serious illness.







South Carolina Department of Health
and Environmental Control

www.scdhec.gov/tat

SOUTH CAROLINA

**Tactics
Against
Terrorism**

Be Safe. Be Smart.